

Simplify using the distributive property.

1.  $2(3 + 5) =$

4.  $-5(b - 1) =$

2.  $-6(7 + 3) =$

5.  $x(a + b) =$

3.  $4(2a - 5) =$

6.  $-3(3x + 4) =$

Use the distributive property in reverse to rewrite each expression.

For example:  $7y - 14 = 7(y - 2)$

7.  $2(3) + 2(5) =$

10.  $-5b + 5 =$

8.  $-6(7) + (-6)(3) =$

11.  $ax + bx =$

9.  $8a - 20 =$

12.  $-9x - 12 =$

Use the distributive property to make these multiplication problems easier to do in your head.

For example:  $7 \cdot 13 = 7 \cdot (10 + 3) = 7 \cdot 10 + 7 \cdot 3 = 70 + 21 = 91$

Show the steps just like I did in the example.

13.  $3 \cdot 15 =$

14.  $-4 \cdot 21 =$

Check yourself: #1-6 match #7-12.

Indicate which property (associative, commutative, identity, distributive) has been used in each step to simplify.

15.

Expression	Property
$78 + 2(8 + 1) + 4$	Given example
$78 + 16 + 2 + 4$	
$78 + 2 + 16 + 4$	
$80 + 16 + 4$	Addition fact
$80 + (16 + 4)$	
$80 + 20$	Addition fact
100	Addition fact

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Expression	Property
$6 + 3(4 + -3) + -3$	Given example
$6 + 12 + -9 + -3$	
$6 + (12 + -9) + -3$	
$6 + 3 + -3$	Addition fact
$6 + (3 + -3)$	
$6 + 0$	Addition fact
6	

- 1) Use the distributive property to rewrite the following expressions. Do not simplify.

a.  $4(x + 4) =$

b.  $(2x - 3y)5 =$

c.  $2(3a - 7 + 2b) =$

d.  $x(6 + 3) =$

- 2) Simplify each expression (collect like terms).

a.  $3(x + 2y) + 5(3 - 5x) =$

b.  $3(2a - b) + 6b =$

c.  $3x + 5y - 7 + x + 2y =$

d.  $12x - 6y + 2x - 9 + y =$

- 3) Factor the following expressions (using the distributive property in reverse).

a.  $4x + 4y =$

b.  $3x - 6y + 9 =$

c.  $2a + 4b =$

d.  $3w - 11w =$

e.  $7x - 14y + 35 =$

f.  $3a - 21b + 18c =$